

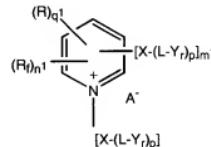
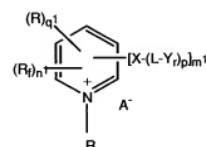
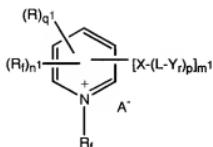
Amendments to the Claims:

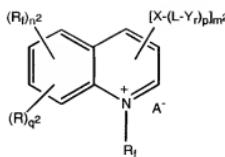
1. (currently amended) A method for improving the particle size and size distribution of electrophoretic microparticles and the performance of an electrophoretic display, which method comprises adding a fluorinated quaternary nitrogen salt into the precursor/internal phase of a process for the formation of the electrophoretic microparticles:

- a) adding a fluorinated quaternary nitrogen salt into a precursor/internal phase, or a continuous phase, or both the precursor/internal phase and the continuous phase, wherein the precursor/internal phase comprises a polymer and the continuous phase comprises a fluorinated solvent or solvent mixture;
- b) emulsifying the precursor/internal phase into a continuous phase to form an emulsion; and
- c) forming electrophoretic microparticles by hardening the emulsion.

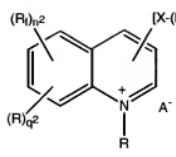
2. (currently amended) The method of Claim 1 wherein said fluorinated quaternary nitrogen salt is a fluorinated pyridinium, fluorinated quinolinium, fluorinated ammonium, fluorinated acridinium, fluorinated azonium or a fused ring derivative thereof.

3. (currently amended) The method of Claim 2 1 wherein said fluorinated quaternary nitrogen salt is represented by the following formulas:

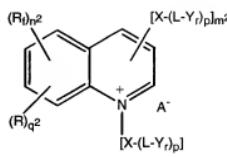




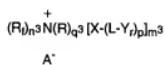
Structure (Q-1)



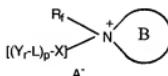
Structure (Q-2)



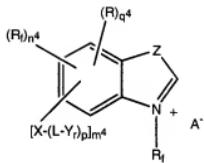
Structure (Q-3)



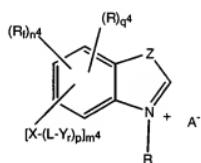
Structure (A-1)



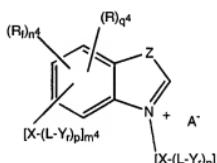
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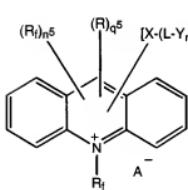
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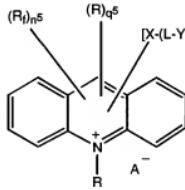
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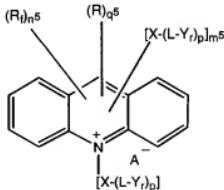
Structure (A-5)



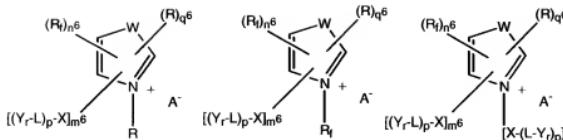
Structure (A-6)



Structure (A-7)



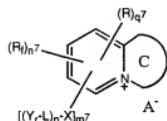
Structure (A-8)



Structure (A-9)

Structure (A-10)

Structure (A-11)



Structure (A-12)

wherein:

A⁻ is a counterion,

R is chlorine, bromine, iodine, cyano, nitro, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, R¹O-, R¹S-, R¹R²N-, R¹CO-, R¹OCO-, R¹COO-, R¹CONR²⁻, R¹R²NCO-, R¹NHCONR²⁻, R¹SO₂NR²⁻, R¹R²NSO₂₋, R¹SO₂- or R¹SO₂- in which R¹ and R² are independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

R_f is fluorine, a fluorinated derivative of any one of alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl or a fluorinated oligomer or polymer; provided that R_f is not fluorine when R_f is bonded to nitrogen;

W is -S- or is -NR³⁻ in which R³ is hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

X is a linking group;

L is absent or a di-, tri- or tetra-valent linking chain;

Y is a reactive functional group;

Z is -O- or -S-, or is -CR⁴₂- or -NR⁴₂₋ in which each R⁴ is independently hydrogen, alkyl,

substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

r is 1-3;

p is 1-5;

m^1 , n^1 and q^1 are independently integers from 0-5, and $m^1+n^1+q^1 \leq 5$;

m^2 , n^2 , and q^2 are independently integers from 0-7 and $m^2+n^2+q^2 \leq 7$;

m^3 , n^3 , and q^3 are independently integers from 0-4, and $m^3+n^3+q^3=4$;

m^4 , n^4 , and q^4 are independently integers from 0-5, and $m^4+n^4+q^4 \leq 5$;

m^5 , n^5 , and q^5 are independently integers from 0-9, and $m^5+n^5+q^5 \leq 9$;

m^6 , n^6 , and q^6 are independently integers from 0-3, and $m^6+n^6+q^6 \leq 3$;

m^7 , n^7 , and q^7 are independently integers from 0-6, and $m^7+n^7+q^7 \leq 6$;

the ring B is a saturated or unsaturated monocyclic or fused bi- or tricyclic ring having 4-13 ring atoms, optionally comprising one or two ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-2 is an optionally substituted pyrrolidinium, piperidinium or morpholinium salt provided that the ring B is not an aromatically unsaturated ring; and the ring C is an aromatic monocyclic or fused bi- or tricyclic ring having 4-12 ring atoms, optionally comprising 1-4 ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-12 is an optionally substituted quinolizinium salt,

provided that the fluorinated quaternary nitrogen salt comprises at least 10% by weight of fluorine.

4. (previously presented) The method of Claim 3 wherein said counterion is an inorganic anion, an optionally fluorinated alkyl-, heteroalkyl-, aryl-, or heteroaryl-carboxylate or -sulfonate anion, a R_r-substituted-carboxylate or -sulfonate anion or an anion of optionally fluorinated di(alkylsulfonyl)imide.

5. (previously presented) The method of Claim 4 wherein said inorganic anion is F⁻, Cl⁻, Br⁻, I⁻, NO₃⁻, NO₂⁻, MnO₄⁻, PF₆⁻, AsF₆⁻ and SbF₆⁻ or a borate ion.

6. (original) The method of Claim 4 wherein said optionally fluorinated alkylcarboxylate anion is $C_aH_bF_{(2a+1-b)}CO_2^-$ wherein a is 1-30 and b is determined based on the fluorine content.

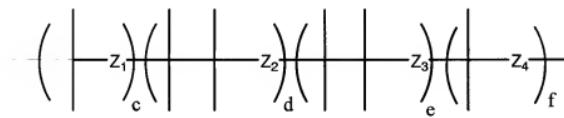
7. (original) The method of Claim 4 wherein said optionally fluorinated alkylsulfonate anion is $C_aH_bF_{(2a+1-b)}SO_3^-$ wherein a is 1-30 and b is determined based on the fluorine content.

8. (original) The method of Claim 4 wherein said optionally fluorinated arylcarboxylate or -sulfonate anion is $C_aH_bF_{(2a-7-b)}CO_2^-$ or $C_aH_bF_{(2a-7-b)}SO_3^-$ wherein a is 6-30 and b is determined based on the fluorine content.

9. (original) The method of Claim 4 wherein said optionally fluorinated arylcarboxylate or -sulfonate anion is $C_aH_bF_{(2a-13-b)}CO_2^-$ or $C_aH_bF_{(2a-13-b)}SO_3^-$ wherein a is 10-30 and b is determined based on the fluorine content.

10. (original) The method of Claim 4 wherein said anion of optionally fluorinated di(alkylsulfonyl)imide is $[C_aH_bF_{(2a+1-b)}SO_2]_2N^-$ wherein a is 1-30 and b is determined based on the fluorine content.

11. (previously presented) The method of Claim 4 wherein the R_f in the R_f -substituted-carboxylate or -sulfonate anion is represented by the following formula:



(A)

wherein:

the undesignated open positions are independently substituted by hydrogen, halogen,

alkyl, aryl, alkylaryl, arylalkyl, fluoroalkyl, fluoroaryl, fluoroalkylaryl, alkylfluoroaryl, fluoroarylalkyl, arylfluoroalkyl, —OR⁵, —OC(O)R⁶, —C(O)OR⁵, —C(O)NR⁵R⁶ or a substituted derivative thereof, wherein R⁵ and R⁶ are independently hydrogen, halogen, alkyl, aryl, alkylaryl, arylalkyl, fluoroalkyl, fluoroaryl, fluoroalkylaryl, alkylfluoroaryl, fluoroarylalkyl, arylfluoroalkyl or a fluorinated polyether and substituted derivatives thereof;

c, d, e and f may be independently 0-20; and

Z₁, Z₂, Z₃ and Z₄ are independently oxygen or absent.

12. (original) The method of Claim 11 wherein said open positions are independently substituted fluorine or a fluorinated alkyl.

13. (original) The method of Claim 12 wherein said fluorinated alkyl is a fluorinated methyl.

14. (previously presented) The method of Claim 11 wherein said R₇- substituted carboxylates or -sulfonates are F(C₃F₆O)_dCF(CF₃)CO₂⁻, F(C₃F₆O)_dCF₂CF₂CO₂⁻, CF₃O(C₂F₄O)_dCF₂CO₂⁻, F(C₂F₄O)_dCF₂CO₂⁻, F(C₃F₆O)_dCF(CF₃)SO₃⁻, F(C₃F₆O)_dCF₂CF₂SO₃⁻, CF₃O(C₂F₄O)_dCF₂SO₃⁻ or F(C₂F₄O)_dCF₂SO₃⁻ wherein d is 1-20.

15. (previously presented) The method of Claim 3 wherein X is alkylene, heteroalkylene, arylene, heteroarylene, oxyalkylene, oxyarylene, -(OCHR⁷CHR⁸)_g-, -(CHR⁷CHR⁸O)_g-, -CO-, -C(O)-, -OC(O)-, -C(O)NR⁷-, -C(O)N<, -C(O)NH-, -NR⁷-, -N=, -NR⁷C(O)- in which R⁷ and R⁸ are independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl and g is 1-300.

16. (original) The method of Claim 3 wherein L is absent or a linking chain comprising one or more of the following moieties, connected together but not in any particular order: alkylene, heteroalkylene, arylene, heteroarylene, polyether,

fluoropolyether or a linking moiety.

17. (previously presented) The method of Claim 3 wherein L is a linking chain comprising one or more of the following moieties, connected together but not in any particular order: alkylene, heteroalkylene, arylene, heteroarylene, polyether, fluoropolyether, —O—, —HN—, >N—, —S—, —CO—, —C(O)O—, —O(O)C—, —NHC(O)—, >NC(O)—, —NHC(O)O—, —OC(O)NH—, —C(O)NH—, —C(S)NH—, —NHC(O)NH—, —NHC(S)NH—, —SC(O)NH— or —NHC(O)S—.

18. (original) The method of Claim 3 wherein Y is HO—, HS—, H₂N—, NCO—, NCS—, HO(O)C—, epoxy, aziridinyl, carbodiimide, a short chain alkoxy silyl, a carboxylic acid derivative, chloroformate, vinyl or other functional groups capable of undergoing polymerization or crosslinking.

19. (original) The method of Claim 18 wherein said vinyl is -CH=CH₂, -OCH=CH₂, -OCOCH=CH₂, -OCOC(CH₃)=CH₂, -OOCCH=CHCOOH or -(C₆H₄)-CH=CH₂.

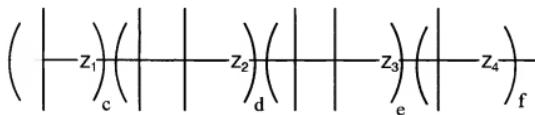
20. (original) The method of Claim 3 wherein said fluorinated quaternary nitrogen salts are represented by P-1 and A-1.

21. (previously presented) The method of Claim 3 wherein said counterion, A⁻, is an optionally fluorinated alkyl- or aryl-carboxylate or -sulfonate anion or a R_r-substituted-carboxylate or -sulfonate anion.

22. (original) The method of Claim 3 wherein m¹-m⁷ is 1 and p and r are independently 1 or 2.

23. (original) The method of Claim 3 wherein R is an alkyl.

24. (previously presented) The method of Claim 3 wherein R_f is preferably a fluorinated alkyl or a fluorinated oligomer or polymer of the following formula:



(A)

wherein:

the undesignated open positions are independently substituted by hydrogen, halogen, alkyl, aryl, alkylaryl, arylalkyl, fluoroalkyl, fluoroaryl, fluoroalkylaryl, alkylfluoroaryl, fluoroarylalkyl, arylfluoroalkyl, —OR⁵, —OC(O)R⁶, —C(O)OR⁵, —C(O)NR⁵R⁶ or a substituted derivative thereof, wherein R⁵ and R⁶ are independently hydrogen, halogen, alkyl, aryl, alkylaryl, arylalkyl, fluoroalkyl, fluoroaryl, fluoroalkylaryl, alkylfluoroaryl, fluoroarylalkyl, arylfluoroalkyl or a fluorinated polyether and substituted derivatives thereof;

c, d, e and f may be independently 0-20; and

Z₁, Z₂, Z₃ and Z₄ are independently oxygen or absent.

25. (original) The method of Claim 3 wherein X is an alkylene chain and L is absent.

26. (original) The method of Claim 25 wherein Y is preferably HO— or H₂N—.

27. (original) The method of Claim 3 wherein X is —C(O)N< or —C(O)NH— and L is an alkylene chain.

28. (original) The method of Claim 27 wherein Y is HO— or H₂N—.

29. (original) The method of Claim 3 wherein X is an alkylene chain, L is a

linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), >N-, -O-, -OC(O)NH-, -NHC(O)-, -(O)CNH-, -NHC(O)NH-, polyether or fluoropolyether and Y is HO—, H₂N— or —OCOC(CH₃)=CH₂.

30. (previously presented) The method of Claim 29 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), -OC(O)NH-, -NHC(O)NH- or polyether and Y is -NH₂.

31. (previously presented) The method of Claim 29 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), >N-, -OC(O)NH- or -NHC(O)NH- and Y is -NH₂.

32. (previously presented) The method of Claim 29 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s) or -OC(O)NH- and Y is —OCOC(CH₃)=CH₂.

33. (previously presented) The method of Claim 29 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), >N-, -NHC(O)-, -C(O)NH- or fluoropolyether and Y is -NH₂.

34. (original) The method of Claim 3 wherein X is -C(O)N< or -C(O)NH-, L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), >N-, -O-, -OC(O)NH-, -NHC(O)-, -(O)CNH-, -NHC(O)NH-, polyether or fluoropolyether and Y is HO—, H₂N— or —OCOC(CH₃)=CH₂.

35. (previously presented) The method of Claim 34 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), -OC(O)NH-, -NHC(O)NH- or polyether and Y is -NH₂.

36. (previously presented) The method of Claim 34 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s), >N-, -OC(O)NH- or -NHC(O)NH- and Y is -NH₂.

37. (previously presented) The method of Claim 34 wherein L is a linking chain comprising one or more of the following, connected together but not in any particular order: alkylene(s) or -OC(O)NH- and Y is -OCOC(CH₃)=CH₂.

38. (previously presented) A process for the preparation of electrophoretic microparticles, which process comprises:

- (a) preparing a precursor/internal phase comprising a polymer precursor;
- (b) emulsifying the precursor/internal phase into a continuous phase comprising a fluorinated solvent or solvent mixture to form an emulsion; and
- (c) forming electrophoretic microparticles by hardening the emulsion, in which a fluorinated quaternary nitrogen salt is present in the precursor/internal phase, the continuous phase or both the precursor/internal phase and the continuous phase.

39. (original) The process of Claim 38 further comprising dispersing a pigment, in the form of particles, into the precursor/internal phase.

40. (currently amended) The process of Claim 38 wherein said fluorinated quaternary nitrogen salt is a fluorinated pyridinium, fluorinated quinolinium, fluorinated ammonium, fluorinated acridinium, fluorinated azolium salt or a fused ring derivative thereof.

41. (original) The process of Claim 38 wherein said fluorinated quaternary nitrogen salt is present in the amount of about 0.1% to about 20% by weight, based on the total weight of the electrophoretic microparticles.

42. (original) The process of Claim 38 wherein said fluorinated quaternary nitrogen salt is present in the amount of about 0.2% to about 10% by weight, based on the total weight of the electrophoretic microparticles.

43. (original) The process of Claim 38 further comprising adding a protective colloid in the continuous phase.

44. (original) The process of Claim 38 further comprising adding a second charge controlling agent soluble or dispersible in the continuous phase.

45. (previously presented) The process of Claim 38 further comprising adding a second charge controlling agent in the precursor/internal phase.

46. (previously presented) The process of Claim 38 further comprising adding a second monomer, chain extender or oligomer in the precursor/internal phase.

47. (original) The process of Claim 38 wherein step (b) is a direct or inverse emulsification process.

48. (original) The process of Claim 38 wherein said precursor/internal phase further comprises a fugitive diluent.

49. (original) The process of Claim 48 wherein said fugitive solvent is a solvent having a boiling point lower than 160°C.

50. (previously presented) The process of Claim 49 wherein said fugitive solvent is selected from the group consisting of acetone, ether, methyl ethyl ketone, methyl propyl ketone, methyl butyl ketone, cyclohexanone, ethyl acetate, propyl acetate, methylene chloride, tetrahydrofuran, toluene and xylene.

51. (currently amended) An electrophoretic dispersion which comprises electrophoretic microparticles comprising a fluorinated quaternary nitrogen salt fluorinated pyridinium, fluorinated quinolinium, fluorinated ammonium, fluorinated acridinium, fluorinated azolium or a fused ring derivative thereof.

52. (cancelled)

53. (currently amended) An electrophoretic display comprising:

- (a) a top layer and a bottom layer, at least one of which is transparent,
- (b) an array of cells sandwiched between the two layers and said cells display cells which are filled with an electrophoretic dispersion comprising electrophoretic microparticles which comprises a fluorinated quaternary nitrogen salt fluorinated pyridinium, fluorinated quinolinium, fluorinated ammonium, fluorinated acridinium, fluorinated azolium or a fused ring derivative thereof.

54. (original) The electrophoretic display of Claim 53 wherein said electrophoretic microparticles are pigment-containing microparticles.

55. (cancelled)

56. (original) The electrophoretic display of Claim 53 wherein said cells are prepared by the microcup technology.

57. (original) The electrophoretic display of Claim 53 wherein said cells are prepared by the micropism or microgroove technology.

58. (original) The electrophoretic display of Claim 53 wherein said cells are prepared by the encapsulation technology.

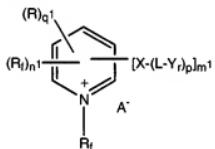
59. (original) The electrophoretic display of Claim 53 which is driven by the traditional up/down switching mode, the in-plane switching mode, the total internal reflection switching mode or the dual switching mode.

60-61. (cancelled)

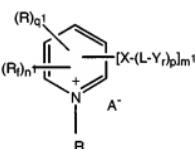
62. (new) The method of Claim 1 wherein a pigment in the form of particles is predispersed in said precursor/internal phase.

63. (new) The process of Claim 38 wherein a pigment in the form of particles is predispersed in said precursor/internal phase.

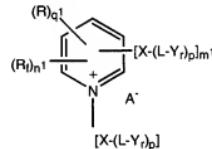
64. (new) The process according to Claim 38, wherein said fluorinated quaternary nitrogen salt is selected from the group consisting of the following formulas:



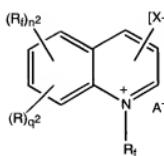
Structure (P-1)



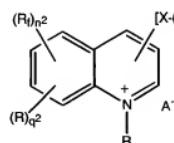
Structure (P-2)



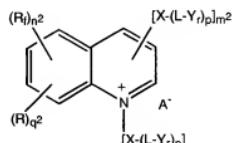
Structure (P-3)



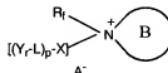
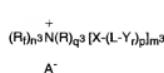
Structure (Q-1)



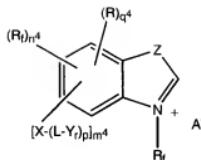
Structure (Q-2)



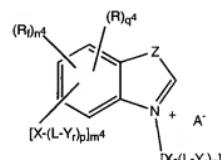
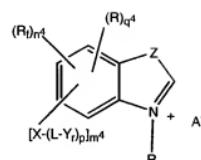
Structure (Q-3)



Structure (A-1)



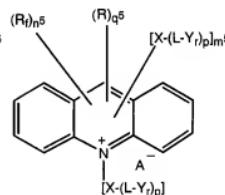
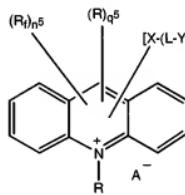
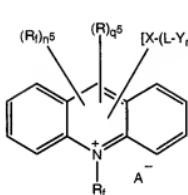
Structure (A-2)



Structure (A-3)

Structure (A-4)

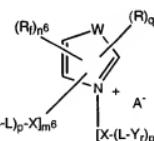
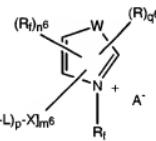
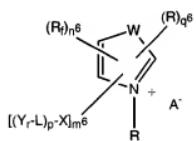
Structure (A-5)



Structure (A-6)

Structure (A-7)

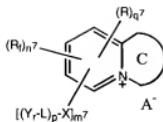
Structure (A-8)



Structure (A-9)

Structure (A-10)

Structure (A-11)



Structure (A-12)

wherein:

A⁻ is a counterion,

R is chlorine, bromine, iodine, cyano, nitro, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, R¹O-, R¹S-, R¹R²N-, R¹CO-, R¹OCO-, R¹COO-, R¹CONR²-, R¹R²NCO-, R¹NHCONR²-, R¹SO₂NR²-, R¹R²NSO₂-, R¹SO-, or R¹SO₂- in which R¹ and R² are independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

R_f is fluorine, a fluorinated derivative of any one of alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl or a fluorinated oligomer or polymer; provided that R_f is not fluorine when R_f is bonded to nitrogen;

W is -S- or is -NR³- in which R³ is hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

X is a linking group;

L is absent or a di-, tri- or tetra-valent linking chain;

Y is a reactive functional group;

Z is -O- or -S-, or is -CR⁴₂- or -NR⁴- in which each R⁴ is independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

r is 1-3;

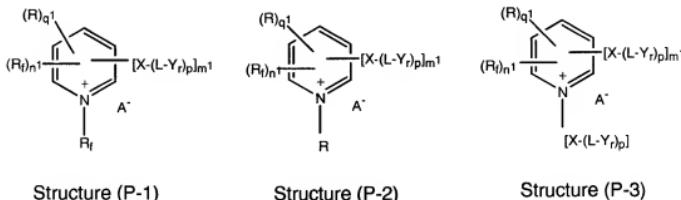
p is 1-5;

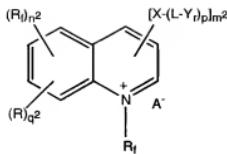
m¹, n¹ and q¹ are independently integers from 0-5, and m¹+n¹+q¹≤5;

m², n², and q² are independently integers from 0-7 and m²+n²+q²≤7;

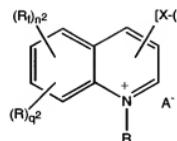
m^3 , n^3 , and q^3 are independently integers from 0-4, and $m^3+n^3+q^3=4$;
 m^4 , n^4 , and q^4 are independently integers from 0-5, and $m^4+n^4+q^4\leq 5$;
 m^5 , n^5 , and q^5 are independently integers from 0-9, and $m^5+n^5+q^5\leq 9$;
 m^6 , n^6 , and q^6 are independently integers from 0-3, and $m^6+n^6+q^6\leq 3$;
 m^7 , n^7 , and q^7 are independently integers from 0-6, and $m^7+n^7+q^7\leq 6$;
the ring B is a saturated or unsaturated monocyclic or fused bi- or tricyclic ring having 4-13 ring atoms, optionally comprising one or two ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-2 is an optionally substituted pyrrolidinium, piperidinium or morpholinium salt provided that the ring B is not an aromatically unsaturated ring; and the ring C is an aromatic monocyclic or fused bi- or tricyclic ring having 4-12 ring atoms, optionally comprising 1-4 ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-12 is an optionally substituted quinolizinium salt,
provided that the fluorinated quaternary nitrogen salt comprises at least 10% by weight of fluorine.

65. (new) An electrophoretic dispersion which comprises electrophoretic microparticles comprising a fluorinated quaternary nitrogen salt selected from the group consisting of the following formulas:

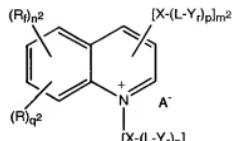




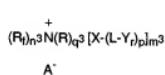
Structure (Q-1)



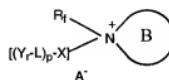
Structure (Q-2)



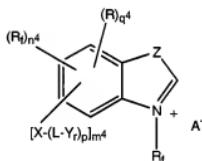
Structure (Q-3)



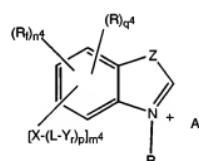
Structure (A-1)



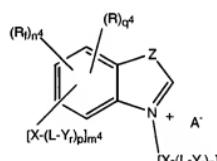
Structure (A-2)



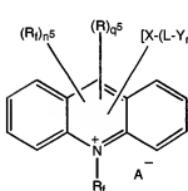
Structure (A-3)



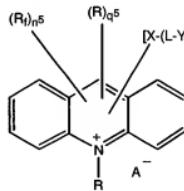
Structure (A-4)



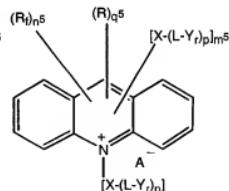
Structure (A-5)



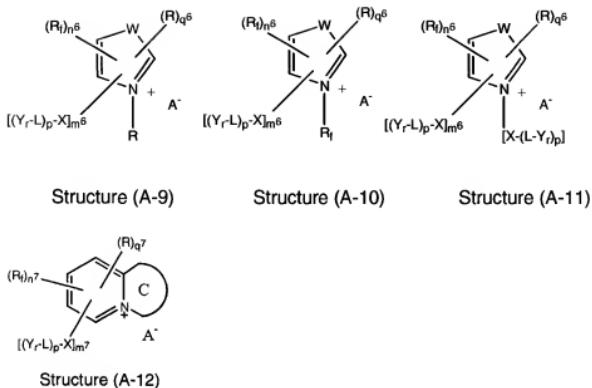
Structure (A-6)



Structure (A-7)



Structure (A-8)



wherein:

A^- is a counterion,

R is chlorine, bromine, iodine, cyano, nitro, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, R^1O^- , R^1S^- , $R^1R^2N^-$, R^1CO^- , R^1OCO^- , R^1COO^- , $R^1CONR^2^-$, $R^1R^2NCO^-$, $R^1NHCONR^2^-$, $R^1SO_2NR^2^-$, $R^1R^2NSO_2^-$, $R^1SO_3^-$, or $R^1SO_2^-$ in which R^1 and R^2 are independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

R_f is fluorine, a fluorinated derivative of any one of alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl or a fluorinated oligomer or polymer; provided that R_f is not fluorine when R_f is bonded to nitrogen;

W is $-S-$ or is $-NR^3-$ in which R^3 is hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

X is a linking group;

L is absent or a di-, tri- or tetra-valent linking chain;

Y is a reactive functional group;

Z is $-O-$ or $-S-$, or is $-CR^4_2-$ or $-NR^4-$ in which each R^4 is independently hydrogen, alkyl,

substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

r is 1-3;

p is 1-5;

m^1, n^1 and q^1 are independently integers from 0-5, and $m^1+n^1+q^1 \leq 5$;

m^2, n^2 , and q^2 are independently integers from 0-7 and $m^2+n^2+q^2 \leq 7$;

m^3, n^3 , and q^3 are independently integers from 0-4, and $m^3+n^3+q^3=4$;

m^4, n^4 , and q^4 are independently integers from 0-5, and $m^4+n^4+q^4 \leq 5$;

m^5, n^5 , and q^5 are independently integers from 0-9, and $m^5+n^5+q^5 \leq 9$;

m^6, n^6 , and q^6 are independently integers from 0-3, and $m^6+n^6+q^6 \leq 3$;

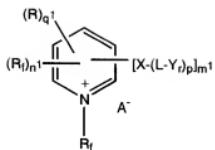
m^7, n^7 , and q^7 are independently integers from 0-6, and $m^7+n^7+q^7 \leq 6$;

the ring B is a saturated or unsaturated monocyclic or fused bi- or tricyclic ring having 4-13 ring atoms, optionally comprising one or two ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-2 is an optionally substituted pyrrolidinium, piperidinium or morpholinium salt provided that the ring B is not an aromatically unsaturated ring; and the ring C is an aromatic monocyclic or fused bi- or tricyclic ring having 4-12 ring atoms, optionally comprising 1-4 ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-12 is an optionally substituted quinolizinium salt,

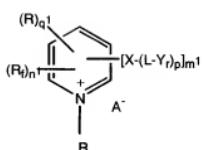
provided that the fluorinated quaternary nitrogen salt comprises at least 10% by weight of fluorine.

66. (new) An electrophoretic display comprising:

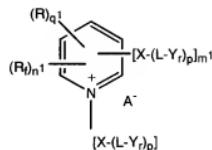
- (a) a top layer and a bottom layer, at least one of which is transparent,
- (b) an array of cells sandwiched between the two layers and said cells are filled with an electrophoretic dispersion comprising electrophoretic particles which comprises a fluorinated quaternary nitrogen salt selected from the group consisting of the following formulas:



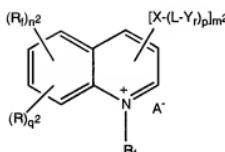
Structure (P-1)



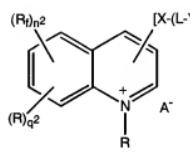
Structure (P-2)



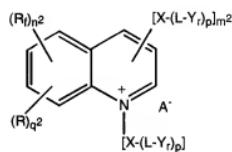
Structure (P-3)



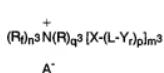
Structure (Q-1)



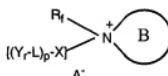
Structure (Q-2)



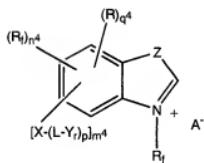
Structure (Q-3)



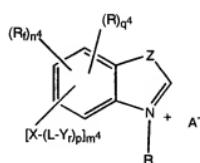
Structure (A-1)



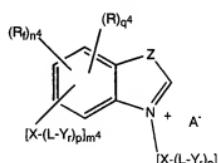
Structure (A-2)



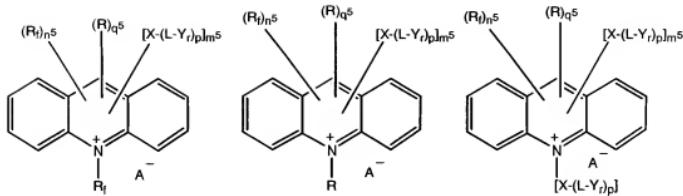
Structure (A-3)



Structure (A-4)



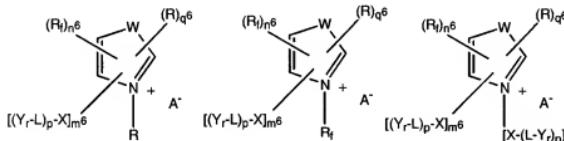
Structure (A-5)



Structure (A-6)

Structure (A-7)

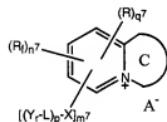
Structure (A-8)



Structure (A-9)

Structure (A-10)

Structure (A-11)



Structure (A-12)

wherein:

A^- is a counterion,

R is chlorine, bromine, iodine, cyano, nitro, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, R^1O^- , R^1S^- , $R^1R^2N^-$, R^1CO^- , R^1OCO^- , $R^1CONR^2^-$, $R^1R^2NCO^-$, $R^1NHCONR^2^-$, $R^1SO_2NR^2^-$, $R^1R^2NSO_2^-$, $R^1SO_3^-$, or $R^1SO_2^-$ in which R^1 and R^2 are independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

R_f is fluorine, a fluorinated derivative of any one of alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl or a

fluorinated oligomer or polymer; provided that R_f is not fluorine when R_f is bonded to nitrogen;

W is -S- or is -NR³- in which R³ is hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

X is a linking group;

L is absent or a di-, tri- or tetra-valent linking chain;

Y is a reactive functional group;

Z is -O- or -S-, or is -CR⁴₂- or -NR⁴- in which each R⁴ is independently hydrogen, alkyl, substituted alkyl, heteroalkyl, substituted heteroalkyl, aryl, substituted aryl, heteroaryl or substituted heteroaryl;

r is 1-3;

p is 1-5;

m¹, n¹ and q¹ are independently integers from 0-5, and m¹+n¹+q¹≤5;

m², n², and q² are independently integers from 0-7 and m²+n²+q²≤7;

m³, n³, and q³ are independently integers from 0-4, and m³+n³+q³=4;

m⁴, n⁴, and q⁴ are independently integers from 0-5, and m⁴+n⁴+q⁴≤5;

m⁵, n⁵, and q⁵ are independently integers from 0-9, and m⁵+n⁵+q⁵≤9;

m⁶, n⁶, and q⁶ are independently integers from 0-3, and m⁶+n⁶+q⁶≤3;

m⁷, n⁷, and q⁷ are independently integers from 0-6, and m⁷+n⁷+q⁷≤6;

the ring B is a saturated or unsaturated monocyclic or fused bi- or tricyclic ring having 4-13 ring atoms, optionally comprising one or two ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-2 is an optionally substituted pyrrolidinium, piperidinium or morpholinium salt provided that the ring B is not an aromatically unsaturated ring; and the ring C is an aromatic monocyclic or fused bi- or tricyclic ring having 4-12 ring atoms, optionally comprising 1-4 ring heteroatoms selected from the group consisting of O, S and NR* wherein R* is hydrogen or an alkyl of 1-12 carbon atoms, such that structure A-12 is an optionally substituted quinolizinium salt,

provided that the fluorinated quaternary nitrogen salt comprises at least 10% by weight of fluorine.